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ARENT FOX PLLC
1050 CONNECTICUT AVENUE, N.W.
SUITE 400
WASHINGTON, DC 20036

EXAMINER	
HERNANDEZ, NELSON D	
ART UNIT	**PAPER NUMBER**
2612	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/022,377	KONDO ET AL.	
	Examiner	Art Unit	
	Nelson D. Hernandez	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 15-21* is/are rejected.

7)☒ Claim(s) *14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Examiner acknowledges amendments made on the claims received on February 22, 2005. Claims 14-21 have been added.

Response to Arguments

2. Applicant's arguments filed February 22, 2005 have been fully considered but they are not persuasive.

Applicant contends the following:

"Nakazato, US Patent 5,592,575 discloses performing an interpolation process such that the average of the sum of the pixel signals on rows above and below a row being read are added to the row being read and output with the row being read. Rows of Nakazato include color pixels of all three kinds, i.e., R, G and B color pixels. Thus, the output pixel signals of Nakazato include signals generated directly from all kinds of color pixels, not just one kind of color pixel" and that "Nakazato fails to disclose or suggest the first signal processing unit for generating output pixel signals recited in claim 1. Specifically, Nakazato neither discloses nor suggests the first signal processing unit generating a part of output pixel signals directly from signals based on pixel signals of the color pixels of said one kind, as recited in claim 1".

Examiner agrees in the sense that Nakazato discloses performing an interpolation process such that the average of the sum of the pixel signals on rows above and below a row being read are added to the row being read and output with the row being read. Rows of Nakazato include color pixels of all

three kinds, i.e., R, G and B color pixels. Thus, the output pixel signals of Nakazato include signals generated directly from all kinds of color pixels, not just one kind of color pixel.

However, Examiner respectfully disagrees that Nakazato fails to disclose or suggest the first signal-processing unit for generating output pixel signals recited in claim 1. Specifically, Nakazato neither discloses nor suggests the first signal processing unit generating a part of output pixel signals directly from signals based on pixel signals of the color pixels of said one kind, as recited in claim 1. In the interpolation process taught Nakazato, the output for every individual pixel includes part of output pixel signals directly from signals based on pixel signals of the color pixels of said one kind and generating another pad of output pixel signals through interpolation process using signals based on pixel signals of color pixels of another of said at least three kinds, the interpolation process is done for the two colors not present on the pixel positions (i.e. for a Green pixel position, the Blue and Red color are calculated) (Col. 4, lines 16-38; col. 5, lines 16-26).

The invention in the application teaches that the output image being generated includes one color that is directly output and two other colors that are generated, wherein on the whole image, for every pixel the color being output directly is the same color for every output pixel (For example: all Green pixels are directly output), and the other two colors are generated using the other kind of colors (For example: Red and Blue colors are calculated for the position of the Green pixels) as shown in figs. 3A, 3B, 3C and 4. Claim 1 does not specifically

recites that every output pixel in the whole image will include the same kind of color being directly output (i.e. the green color of every pixel is directly output and the other two kind of color are generated or calculated for the whole image). Therefore, the interpolation method in Nakazato reads on claim 1 since the output for every individual pixel includes part of output pixel signals directly from signals based on pixel signals of the color pixels of said one kind and generating another pad of output pixel signals through interpolation process using signals based on pixel signals of color pixels of another of said at least three kinds. Therefore, arguments regarding to claim 1 are not persuasive.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claim 1** is rejected under 35 U.S.C. 102(e) as being anticipated by Inuiya, US Patent 6,882,364 B1.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 1, Inuiya discloses a solid state image pickup apparatus (See fig. 1) comprising: a solid state image pickup device (Figs. 6, 8, 13, 30 and 71) having a number of color pixels disposed in a plurality of rows and columns in a pixel shift layout and generating and outputting pixel signals, said number of color pixels including at least three kinds of color pixels (Red, Green and Blue), color pixels of one of said at least three kind being distributed in a square lattice pattern aligned in row and column directions; and a first signal processing unit for generating output pixel signals by using signals based on said pixel signals, said first signal processing unit generating a part of output pixel signals directly from signals based on pixel signals of the color pixels of said one kind and generating another part of output pixel signals through interpolation process using signals based on pixel signals of color pixels of another of said at least three kinds (See col. 7, lines 46-67; col. 25, lines 1-15; col. 44, lines 33-53).

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 17-21** are rejected under 35 U.S.C. 102(b) as being anticipated by Osada, JP 2000-184386 A.

Regarding claim 17, Osada discloses a solid-state image pickup apparatus (Figs. 6, 13, 21, 26 and 61) comprising: a solid state image pickup device having a number of color pixels disposed in a plurality of rows and columns in a pixel shift layout (See fig. 6) and generating and outputting pixel signals, said number of color pixels including at least three kinds of color pixels, color pixels of one of said at least three kind being distributed in a square lattice pattern (See. Fig. 6) aligned in row and column directions (See translation, page 25, ¶ 0100 – page 26, ¶ 0102) and a signal processing unit for generating output pixel signals by using signals of the color pixels, wherein output picture signals are generated at each color pixel position and at each interstitial position (See translation, page 25, ¶ 0100 – page 26, ¶ 0102; page 68, ¶ 0347 - page 70, ¶ 0359; page 80, claim 32).

Regarding claim 18, Osada inherently discloses that the number of output pixel signals is twice the number of color pixels by teaching the interpolation process for obtaining the pixel values of the color pixel position and at each interstitial position for increasing the resolution (When calculating those pixel positions the output signal will automatically have twice as many pixel than the original number of pixels). Grounds for rejecting claim 17 apply here.

Regarding claim 19, Osada discloses that the output picture signals generated at the interstitial positions are signals interpolated from two color pixels of said one kind and three color pixels of another of said at least three kind (See translation, page 25, ¶ 0100 – page 26, ¶ 0102; page 68, ¶ 0347 - page 70, ¶ 0359; page 80, claim 32).

Regarding claim 20, Osada discloses that the two color pixels of said one kind are located at positions adjacent to said interstitial position (See translation, page 25, ¶ 0100 – page 26, ¶ 0102; page 68, ¶ 0347 - page 70, ¶ 0359; page 80, claim 32).

Regarding claim 21, Osada discloses that one of said three color pixels is located at a position adjacent to said interstitial position (See translation, page 25, ¶ 0100 – page 26, ¶ 0102; page 68, ¶ 0347 - page 70, ¶ 0359; page 80, claim 32).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. **Claims 1, 2, 4, 6-9, 12, 13 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, US Patent 6,522,356 B1 in view of Nakazato, US Patent 5,592,575.

Regarding claim 1, Watanabe discloses a solid-state image pickup apparatus (Figs. 7, 9, 13 and 15) comprising: a solid state image pickup device having a number of color pixels disposed in a plurality of rows and columns in a pixel shift layout (See figs. 1A, 1B and 1C) and generating and outputting pixel signals, said number of color pixels including at least three kinds of color pixels, color pixels of one of said at least three kind being distributed in a square lattice pattern (See figs. 1C, 7, 9, 13 and 15) aligned in row and column directions (Col. 6, lines 1-32; col. 8, lines 1-26 and lines 45-64; col. 11, lines 28-61; col. 13, lines 16-51). Watanabe does not explicitly disclose a first signal processing unit for generating output pixel signals by using signals based on said pixel signals, said first signal processing unit generating a part of output pixel signals directly from signals based on pixel signals of the color pixels of said one kind and generating another part of output pixel signals through interpolation process using signals based on pixel signals of color pixels of another of said at least three kinds.

However, Nakazato teaches an solid state image pickup device having a number of color pixels disposed in a plurality of rows and columns in a pixel shift layout (See fig. 2) and generating and outputting pixel signals, said number of color pixels including at least three kinds of color pixels (Red, Green and Blue, see fig. 2) wherein said device comprises an image processing circuit (Fig. 1: 5) which performs an interpolation process to obtain the value of the color pixel different from the pixel in certain location (i.e. calculating a red or blue pixel in a green pixel location) (Col. 4, lines 16-38; col. 5, lines 16-26). Generating a part of output pixel signals directly from signals based on pixel signals of the color

pixels of one kind is inherent in Nakazato since the colors that do not need to be calculated are transfer directly from the image sensor.

Therefore, taking the combined teaching of Watanabe in view of Nakazato as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Watanabe by having a signal processing unit for generating output pixel signals by using signals based on the pixel signals, said signal processing unit generating a part of output pixel signals directly from signals based on pixel signals of the color pixels of said one kind and generating another part of output pixel signals through interpolation process using signals based on pixel signals of color pixels of another of said at least three kinds. The motivation to do so would enable the solid-state image pickup apparatus to form high-resolution images as suggested by Nakazato (Col. 4, lines 16-38). See also response to arguments.

Regarding claim 2, Watanabe discloses that the at least three kinds of color pixels are red color pixels, green color pixels and blue color pixels (See figs. 1C, 7, 9, 13 and 15) (Col. 6, lines 1-32; col. 8, lines 1-26 and lines 45-64; col. 11, lines 28-61; col. 13, lines 16-51).

Regarding claim 4, Watanabe teaches the same as in claim 2. Therefore, grounds for rejecting claim 2 apply here.

Regarding claim 6, the combined teaching of Watanabe in view of Nakazato teaches the same as in claim 1. Therefore, grounds for rejecting claim 1 apply here.

Regarding claim 7, the combined teaching of Watanabe in view of Nakazato teaches that the signal-processing unit performs interpolation processes by using signals based on pixel signals of two color pixel rows sandwiching one color pixel row and generates output pixel signals for a reproduction pixel row in a reproduction image corresponding to the sandwiched one color pixel row (See Nakazato, col. 4, lines 16-38).

Regarding claim 8, Watanabe teaches that two color pixels of another kind and two color pixels of the other kind are distributed for each of color pixels of said one kind thereabout respectively (See figs. 1C, 7, 9, 13 and 15) (Col. 6, lines 1-32; col. 8, lines 1-26 and lines 45-64; col. 11, lines 28-61; col. 13, lines 16-51).

Regarding claim 9, Watanabe teaches that each two color-pixels of a same kind are disposed with an associated color pixel of said one kind intervening there between (See figs. 1C, 7, 9, 13 and 15) (Col. 6, lines 1-32; col. 8, lines 1-26 and lines 45-64; col. 11, lines 28-61; col. 13, lines 16-51).

Regarding claim 12, Watanabe teaches a vertical charge transfer element (Figs. 7: 4, 9: 4, 13: 4 and 15: 4) provided for each color pixel column, each said vertical charge transfer element being electrically connected to each color pixel of a corresponding color pixel column (Col. 8, lines 1-26 and lines 45-64; col. 11, lines 28-61; col. 13, lines 16-51).

Regarding claim 13, Watanabe teaches a horizontal charge transfer element (Figs. 7: 5, 9: 5, 13: 5 and 15: 5) electrically connected to each vertical charge transfer element (Figs. 7: 4, 9: 4, 13: 4 and 15: 4) and an output amplifier

(Figs. 7: 8, 9: 8, 13: 8 and 15: 8) electrically connected to the horizontal charge transfer element (Col. 8, lines 1-26 and lines 45-64; col. 11, lines 28-61; col. 13, lines 16-51).

Regarding claim 15, the combined teaching of Watanabe in view of Nakazato teaches the same as in claim 1. Therefore, grounds for rejecting claim 1 apply here.

10. **Claims 3 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, US Patent 6,522,356 B1 in view of Nakazato, US Patent 5,592,575 and further in view of Shiraishi, US Patent 5,280,347.

Regarding claim 3, the combined teaching of Watanabe in view of Nakazato fail to teach that at least three kinds of color pixels include complementary color pixels.

However, Shiraishi teaches a color image-sensing device (Fig. 9) comprising a solid state image pickup device (Fig. 9: 1) having a number of color pixels disposed in a plurality of rows and columns in a pixel shift layout (Fig. 7) and generating and outputting pixel signals, said number of color pixels including at least three kinds of color pixels, wherein said at least three kinds of color pixels include complementary color pixels (Cyan, Yellow, Magenta and Green; see fig. 7) (Col. 6, lines 18-34).

Therefore, taking the combined teaching of Watanabe in view of Nakazato and further in view of Shiraishi as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the solid state image pickup apparatus by having a solid state image pickup device having

a number of color pixels disposed in a plurality of rows and columns in a pixel shift layout and generating and outputting pixel signals, said number of color pixels including at least three kinds of color pixels, wherein said at least three kinds of color pixels include complementary color pixels. The motivation to do so would help the solid-state image pickup device to increase the amount of light passing through to the sensor, providing better efficiency compared to a RGB system.

Regarding claim 5, the combined teaching of Watanabe in view of Nakazato and further in view of Shiraishi teaches that color pixels of said one kind are green color pixels (See Shiraishi, fig. 7, col. 6, lines 18-34).

11. **Claims 10 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, US Patent 6,522,356 B1 in view of Nakazato, US Patent 5,592,575 and further in view of Horng, Us Patent 5,663,759.

Regarding claim 10, the combined teaching of Watanabe in view of Nakazato fails to teach a second signal-processing unit for generating output pixel signals by performing interpolation processes using signals based on pixel signals of said number of color pixels.

However, Horng teaches a processor (Fig. 1) for a digital camera comprising a first signal processing circuit (Fig. 1: 30) and second signal processing unit (Fig. 1: 40) for generating output pixel signals by performing interpolation processes using signals based on pixel signals of said number of color pixels (Col. 2, line 51 – col. 3, line 6; col. 3, lines 21-52; col. 4, lines 12-48).

Therefore, taking the combined teaching of Watanabe in view of Nakazato and further in view of Horng as a whole, it would have been obvious to one of ordinary skill in the art to modify the solid-state image pickup apparatus by having a second signal processing unit (Fig. 1: 40) for generating output pixel signals by performing interpolation processes using signals based on pixel signals of said number of color pixels. The motivation to do so would help the solid-state image pickup apparatus to produce full picture zoom, partial picture zoom, still picture, and mosaic functions as suggested by Horng (Col. 1, lines 47-57).

Regarding claim 11, the combined teaching of Watanabe in view of Nakazato and further in view of Horng teaches that the second signal processing unit generates output pixel signals corresponding to a reproduction image having the number of reproduction pixels larger than the total number of said color pixels as in claim 10. Therefore, grounds for rejecting claim 10 apply here.

12. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, US Patent 6,522,356 B1 in view of Nakazato, US Patent 5,592,575 and further in view of Prakash, US 2002/0076114 A1.

Regarding claim 16, the combined teaching of Watanabe in view of Nakazato does not teach that the number of output pixels is half the number of color pixels.

However, Prakash discloses a method of down-sampling pixel signals in an image received from an image sensor by using low pass reduction wherein

the number of output pixels is half the number of color pixels (Page 2, ¶ 0016; page 3, ¶ 0039).

Therefore, taking the combined teaching of Watanabe in view of Nakazato and further in view of Nakazato as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the solid-state image pickup apparatus by down-sampling the pixel signals in an image received from an image sensor by using low pass reduction to reduce the number of output pixels to a half of the number of color pixels. The motivation to do so would have been to display the image data in a display device with less resolution such as an electronic viewfinder.

13. **Claim 17 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, US Patent 6,522,356 B1 in view of Sasaki, US Patent 5,581,357.

Regarding claim 17, Watanabe discloses a solid-state image pickup apparatus (Figs. 7, 9, 13 and 15) comprising: a solid state image pickup device having a number of color pixels disposed in a plurality of rows and columns in a pixel shift layout (See figs. 1A, 1B and 1C) and generating and outputting pixel signals, said number of color pixels including at least three kinds of color pixels, color pixels of one of said at least three kind being distributed in a square lattice pattern (See figs. 1C, 7, 9, 13 and 15) aligned in row and column directions (Col. 6, lines 1-32; col. 8, lines 1-26 and lines 45-64; col. 11, lines 28-61; col. 13, lines 16-51) but does not explicitly disclose a signal processing unit for generating

output pixel signals by using signals of the color pixels, wherein output picture signals are generated at each color pixel position and at each interstitial position.

However, Sasaki teaches a color signal processing apparatus (See fig. 1) for an image sensor (Fig. 1: 10) wherein said processor generates output pixel signals by using signals of the color pixels, wherein output picture signals are generated at each color pixel position and at each interstitial position (Col. 1, line 61 – col. 2, line 53; col. 11, lines 8-58).

Therefore, taking the combined teaching of Watanabe in view of Sasaki as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Watanabe by incorporating a signal processing unit for generating output pixel signals by using signals of the color pixels, wherein output picture signals are generated at each color pixel position and at each interstitial position. The motivation to do so would have been to increase the resolution of the captured image as suggested by Sasaki (Col. 1, line 61 – col. 2, line 52).

Regarding claim 18, the combined teaching of Watanabe in view of Sasaki as applied to claim 17 teaches that the number of output pixel signals is twice the number of color pixels by teaching the interpolation process for obtaining the pixel values of the color pixel position and at each interstitial position for increasing the resolution (When calculating those pixel positions the output signal will automatically have twice as many pixel than the original number of pixels). Grounds for rejecting claim 17 apply here.

Allowable Subject Matter

14. **Claim 14** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 14, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest that each output pixel signal is comprised of a pixel signal taken directly from said one kind of color pixel signals interpolated from other kinds of color pixels of said at least three kinds located in rows above and below rows of said one kind color pixels.

Watanabe discloses a solid-state image pickup apparatus (Figs. 7, 9, 13 and 15) comprising: a solid state image pickup device having a number of color pixels disposed in a plurality of rows and columns in a pixel shift layout (See figs. 1A, 1B and 1C) and generating and outputting pixel signals, said number of color pixels including at least three kinds of color pixels, color pixels of one of said at least three kind being distributed in a square lattice pattern (See figs. 1C, 7, 9, 13 and 15) aligned in row and column directions (Col. 6, lines 1-32; col. 8, lines 1-26 and lines 45-64; col. 11, lines 28-61; col. 13, lines 16-51).

Nakazato teaches an solid state image pickup device having a number of color pixels disposed in a plurality of rows and columns in a pixel shift layout (See fig. 2) and generating and outputting pixel signals, said number of color pixels including at least three kinds of color pixels (Red, Green and Blue, see fig. 2) wherein said device comprises an image processing circuit (Fig. 1: 5) which

performs an interpolation process to obtain the value of the color pixel different from the pixel in certain location (i.e. calculating a red or blue pixel in a green pixel location) (Col. 4, lines 16-38; col. 5, lines 16-26). Generating a part of output pixel signals directly from signals based on pixel signals of the color pixels of one kind is inherent in Nakazato since the colors that do not need to be calculated are transfer directly from the image sensor.

However, Watanabe and Nakazato, either alone or in combination fail to teach or reasonably suggest that each output pixel signal is comprised of a pixel signal taken directly from said one kind of color pixel signals interpolated from other kinds of color pixels of said at least three kinds located in rows above and below rows of said one kind color pixels.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernandez whose telephone number is (571) 272-7311. The examiner can normally be reached on 8:00 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thai Tran can be reached on (571) 272-7382. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nelson D. Hernandez
Examiner
Art Unit 2612

NDHH
July 23, 2005